

2015 ACCOMPLISHMENTS

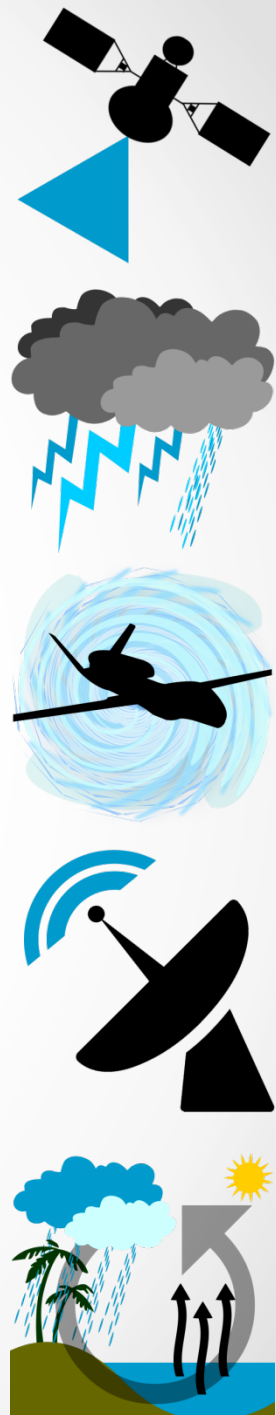
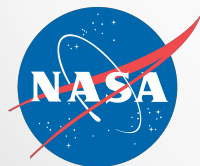
For the GHRC DAAC

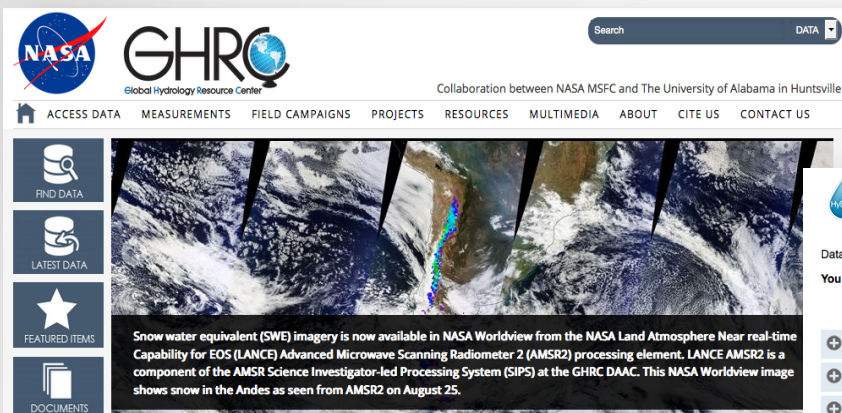
Helen Conover

GHRC Operations Manager

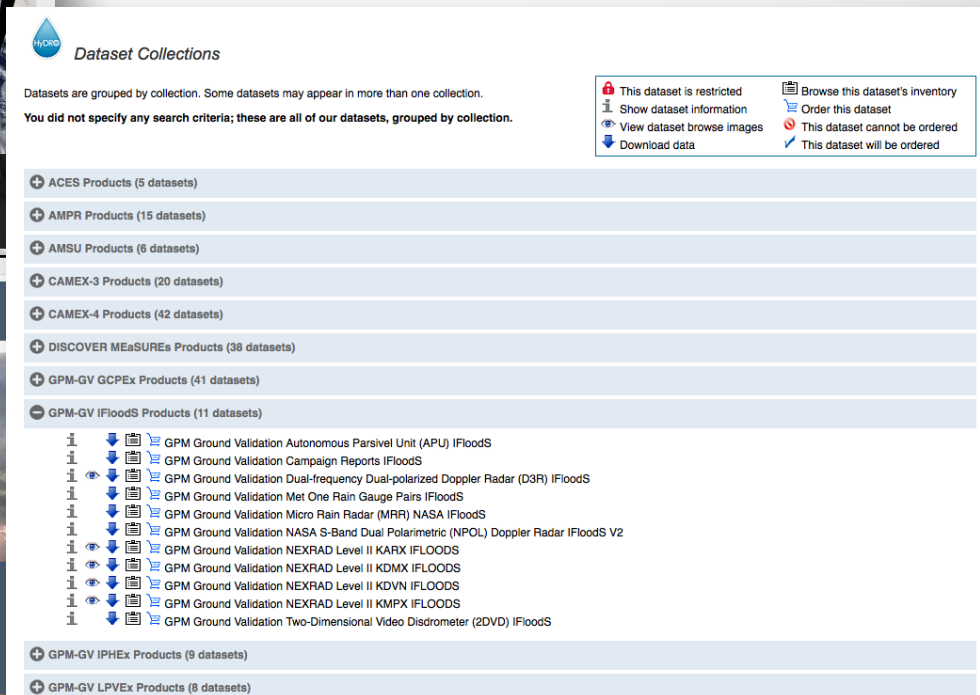
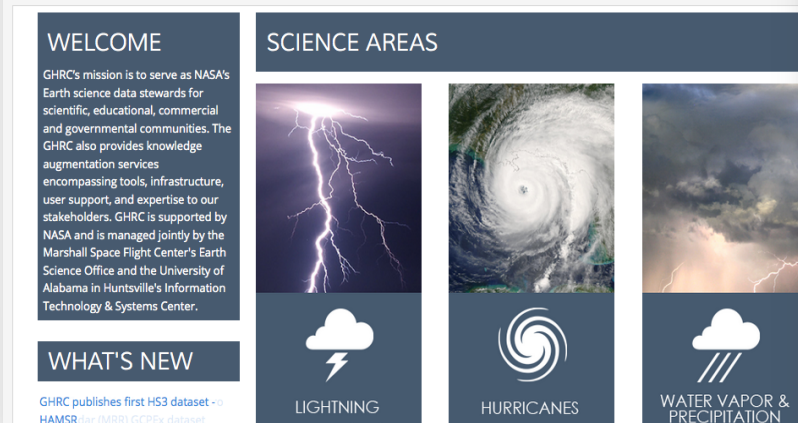
hconover@itsc.uah.edu

Presented at the GHRC User Working Group Meeting
October 7, 2015





New Website



- Organized around science themes and project areas
- New menus for improved site navigation
- Prominent links on home page and search box on every page to make getting to data easy
- Updated HyDRO search tool for cleaner look and navigation

Data Stewardship Improvements

- Big Earth Data Initiative (BEDI)
 - all data from two key collections – the HS3 mission and the DISCOVER MEaSUREs project – are now available via OPeNDAP and related data services.
- Completed migration of all datasets from our aging tape archive system to spinning disk in May 2015.
- Working to encourage the practice of citing data sets in peer-reviewed literature. Progress in FY2015:
 - Completed the process of obtaining and registering a Digital Object Identifier (DOI) for each of the over 300 data sets cataloged and archived at the GHRC.
 - Began contacting all of our data providers to establish an author list for each data citation.

Encouraging Data Citation

The screenshot shows the GHRC (Global Hydrology Resource Center) website. At the top, there's a 'CITE US' link highlighted with a blue circle. Below the header, there's a 'WELCOME' section and 'SCIENCE AREAS' including Lightning, Hurricanes, and Snow. A 'WHAT'S NEW' section mentions the GHRC tape archive system. At the bottom, there's a 'Data Citations and Acknowledgements' section with a blue circle around the 'Data Citations and Acknowledgements' link. The footer includes logos for ITSC, NASA, and the University of Alabama in Huntsville, along with contact information and a privacy policy link.

GPM Ground Validation Autonomous Parsivel Unit (APU) IFloodS

The GPM Ground Validation Autonomous Parsivel Unit (APU) IFLOODS dataset collected data from several sites in eastern Iowa during the spring of 2013. The APU dataset for the Iowa Flood Studies (IFloodS) Field Experiment provides precipitation data including precipitation drop size, counts, and distribution. The APU is an optical disdrometer based on single particle extinction that measures particle size and fall velocity. This APU consists of the Parsivel, which was developed by OTT in Germany, and its support systems, which were designed and built by the University of Alabama in Huntsville.

Please include the following citation in your publications:

Petersen, Walter A., Ali Tokay, Patrick N. Gatlin and Matthew T. Wingo. 2014. *GPM Ground Validation Autonomous Parsivel Unit (APU) IFloodS* [indicate subset used]. Dataset available online at ftp://gpm.nsstc.nasa.gov/gpm_validation/floods/disdrometers_and_gauges/parsivel/data/ from the NASA EOSDIS Global Hydrology Resource Center Distributed Active Archive Center, Huntsville, Alabama, U.S.A.

DOI: <http://dx.doi.org/10.5067/GPMGV/IFLOODS/APU/DATA301>.

[Click here for the citation in RIS format.](#)

[Download Data](#)

Download citation

Example citation with DOI

Science Impact

GHRC Datasets Cited in 2014

Lightning	39
HS3	34
Other Hurricane Science	35
GPM GV	18

Datasets Published by GHRC in 2015

Lightning	1
MEaSURES	4
HS3	3
GPM GV	12

RE: Lightning Dataset

"Sherry, I can't thank you and your co-workers enough. Please pass my thanks on to all concerned. It represents the true spirit of science.

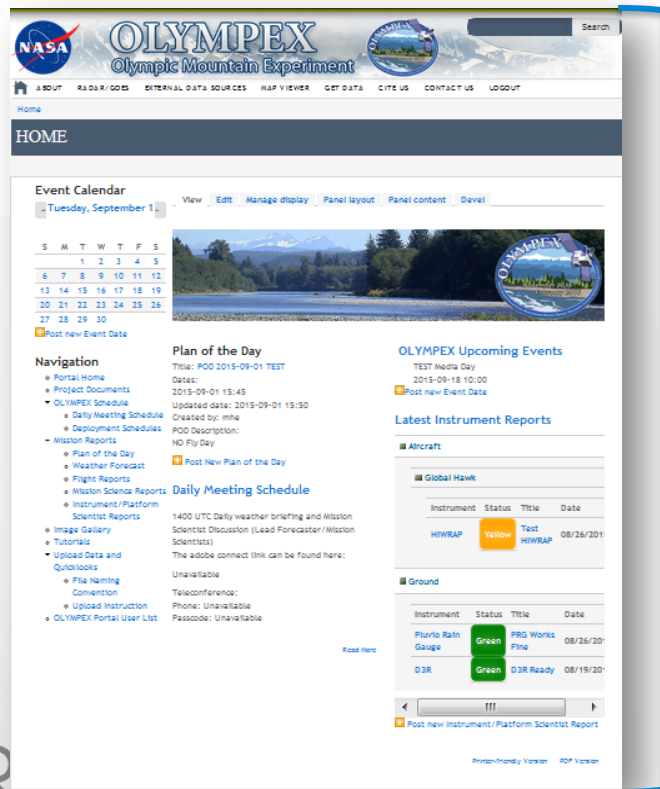
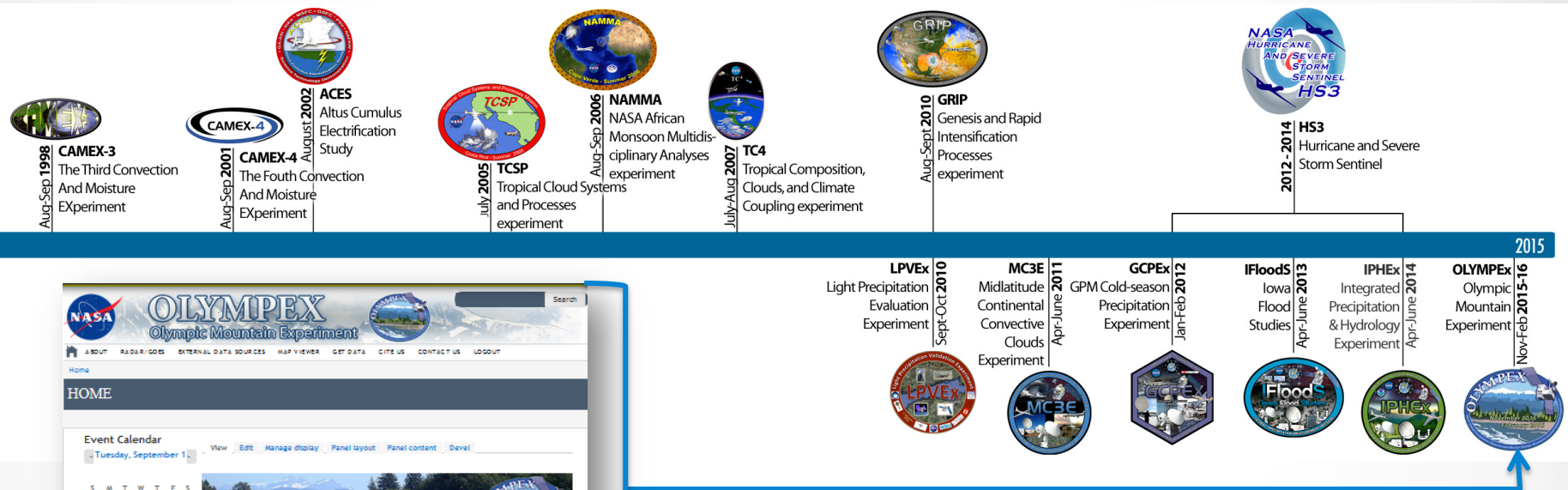
I look forward to hearing from you.

*Regards,
w."*

Re: GHRC DAAC data order

*"Dear Sheery,
thank you very much for your answer.
Everything is crystal clear now!
Best regards,
Victor"*

GPM Ground Validation



Gearing up for OLYMPEX (Nov 2015 – Feb 2016)

- Campaign coordination portal in place
- Working with U Washington on data plans

10/7/2015

HS3 Datasets Published

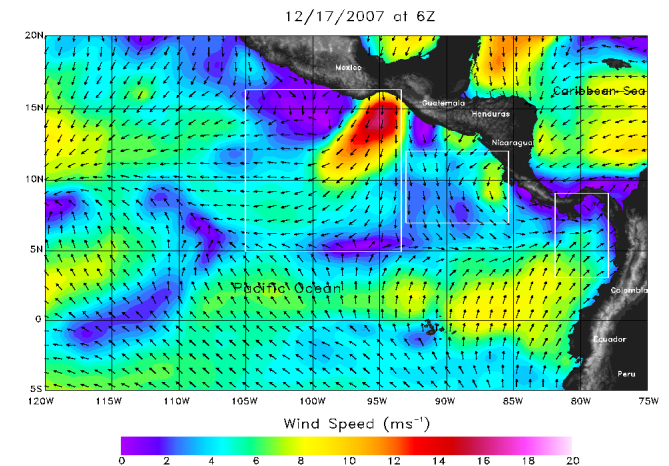
GHRC is working with the HS3 science team to define data and metadata formats and structures conforming to the *netCDF (network Common Data Form) / CF (Climate and Forecast)* data and metadata standard

- *Published datasets* in netCDF-4 with CF-compliant metadata:
 - **HAMSR**: data published for 2012 and 2013
 - **CPL**: data published for 2012, 2013, 2014 (also available in PI-provided HDF5)
 - **HIRAD**: data published for 2014 (earlier missions to be supplied)
- *Datasets in progress*:
 - **HIWRAP**: 2013 data provided; translated to netCDF/CF; working with PI on documentation
 - **AVAPS**: Provided PI with sample AVAPS netCDF/CF file and metadata recommendations. AVAPS Team will provide us a complete netCDF/CF HS3 AVAPS dataset.
 - **S-HIS**: PI is reprocessing data now; will provide us complete netCDF/CF S-HIS dataset.
 - **WWLLN**: subset of the reanalyzed WWLLN data for the mission area

Coastal Gap Winds Climatology and Exploration Tool

Regional Air Sea Interactions (RASI) climatology datasets – collaboration with Remote Sensing Systems

- Coastal mountain gap wind events and resulting sea surface temperature changes due to ocean upwelling
- Three regions in Central America – Tehuantepec, Papagayo, and Panama – for 1998-2011
- Input datasets
 - Cross-Calibrated Multi-Platform (CCMP) ocean surface winds
 - Optimally Interpolated Sea Surface Temperatures (OISST)
- Interactive exploration application:
<http://ghrc.nsstc.nasa.gov/rasi/>



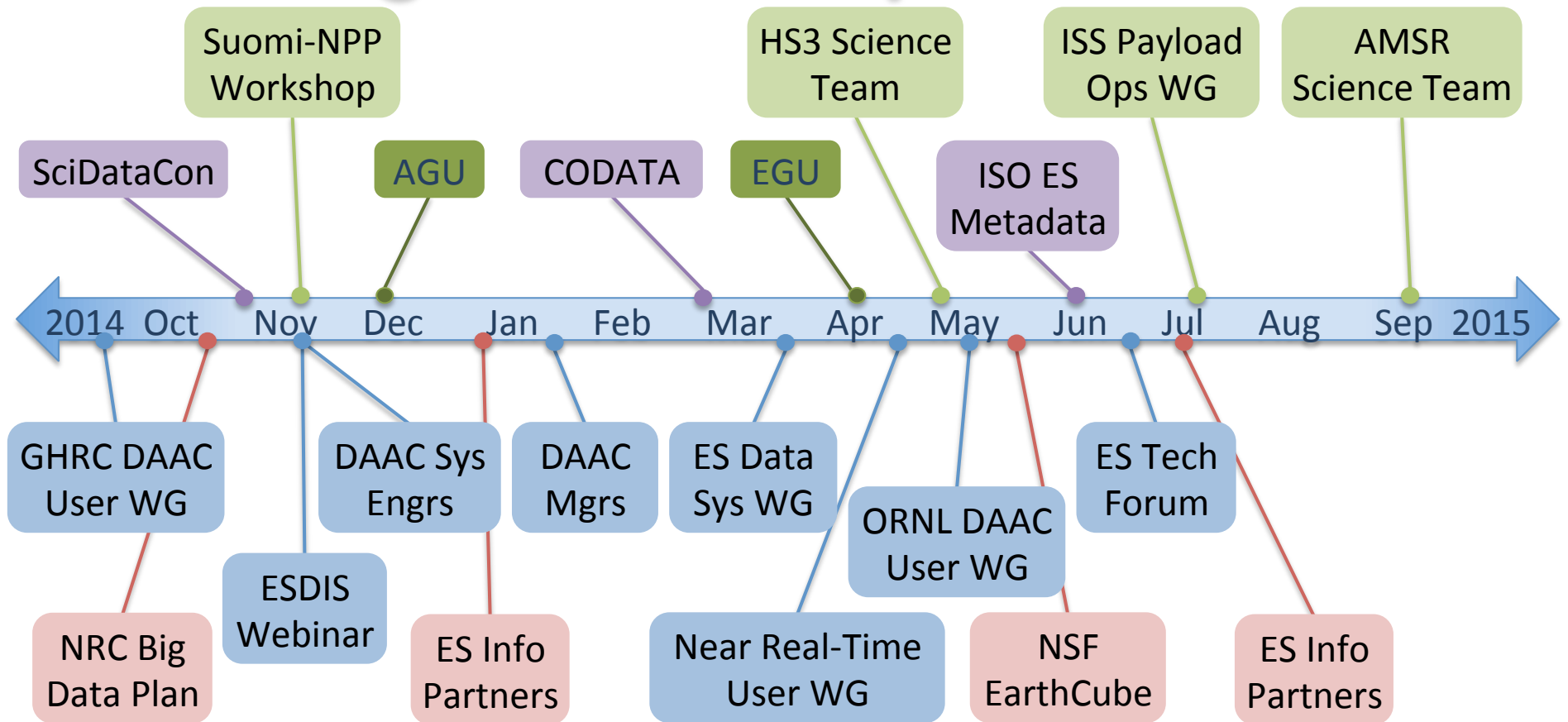
Smith, D. K., X. Li, K. Keiser, and S. Flynn. 2014. Regional Air-Sea Interactions (RASI) climatology for Central America coastal gap wind and upwelling events. Paper presented at the OCEANS 2014 Marine Technology Society/Institute of Electrical and Electronics Engineers Conference, St. John, Newfoundland, doi: 10.1109/OCEANS.2014.7003127.

Lightning Data from Space

- TRMM LIS was powered off in April 2015, marking the end of a 17-year mission
- A second LIS will be deployed to International Space Station in early 2016
 - LIS Payload Operations Control Center (POCC), from which the Science Team will communicate with the instrument via MSFC's Huntsville Operations Support Center, is configured and ready for testing.
 - GHRC is coordinating with the LIS Science Team and the Payload Operations Integration Center (POIC) at NASA Marshall Space Flight Center to establish data ingest and processing workflows.
- LIS/OTD Lightning Climatology datasets offer full, annual, monthly and diurnal climatologies of lightning observed from space from May 1995 through December 2013, including both Optical Transient Detector and TRMM LIS, at 0.5 and 2.5 degree resolutions.

*Daniel J. Cecil, Dennis E. Buechler, and Richard J. Blakeslee, 2015: TRMM LIS Climatology of Thunderstorm Occurrence and Conditional Lightning Flash Rates. J. Climate, **28**, 6536–6547. doi: [10.1175/JCLI-D-15-0124.1](https://doi.org/10.1175/JCLI-D-15-0124.1)*

Conferences, Meetings, Workshops



- NASA Science Community
- Wider Science Community
- NASA ES Data Systems
- US Geoinformatics Community
- Int'l Geoinformatics Community

Publications / Presentations

Ibrahim Demir, **Helen Conover H**, Witold Krajewski, Bong-Chul Seo, Radoslaw Goska, **Yubin He**, **Michael McEniry**, **Sara Graves**, Walter Petersen. 2015. "Data Enabled Field Experiment Planning, Management, and Research using Cyberinfrastructure." *Journal of Hydrometeorology*;16(3): 1155-1170. doi: [10.1175/JHM-D-14-0163.1](https://doi.org/10.1175/JHM-D-14-0163.1).

Kwo-Sen Kuo, Gyorgy Fekete, Amidu Oloso, Michael Bauer, Ramon Ramirez-Linan, **John Rushing**, Thomas Clune, and **Rahul Ramachandran**. 2015. "Advances in Automated Services." *IEEE Geoscience and Remote Sensing Symposium (IGARSS 2015)*, July 26-31 in Milan, Italy.

Manil Maskey, **Sara Graves**, **Michael McEniry**, **Kaylin Bugbee**, **Helen Conover**, and **Rahul Ramachandran**. 2015. "Data Systems for the HS3 Field Campaign." *ESIP 2015 Winter Meeting*. Washington, DC. Available from: <http://www.itsc.uah.edu/main/posters/data-system-hs3-field-campaign-agu-2014>

Rahul Ramachandran and Siri Jodha S. Khalsa. 2015. "Moving from Data to Knowledge: Challenges and Opportunities." *IEEE Geoscience and Remote Sensing Magazine*.

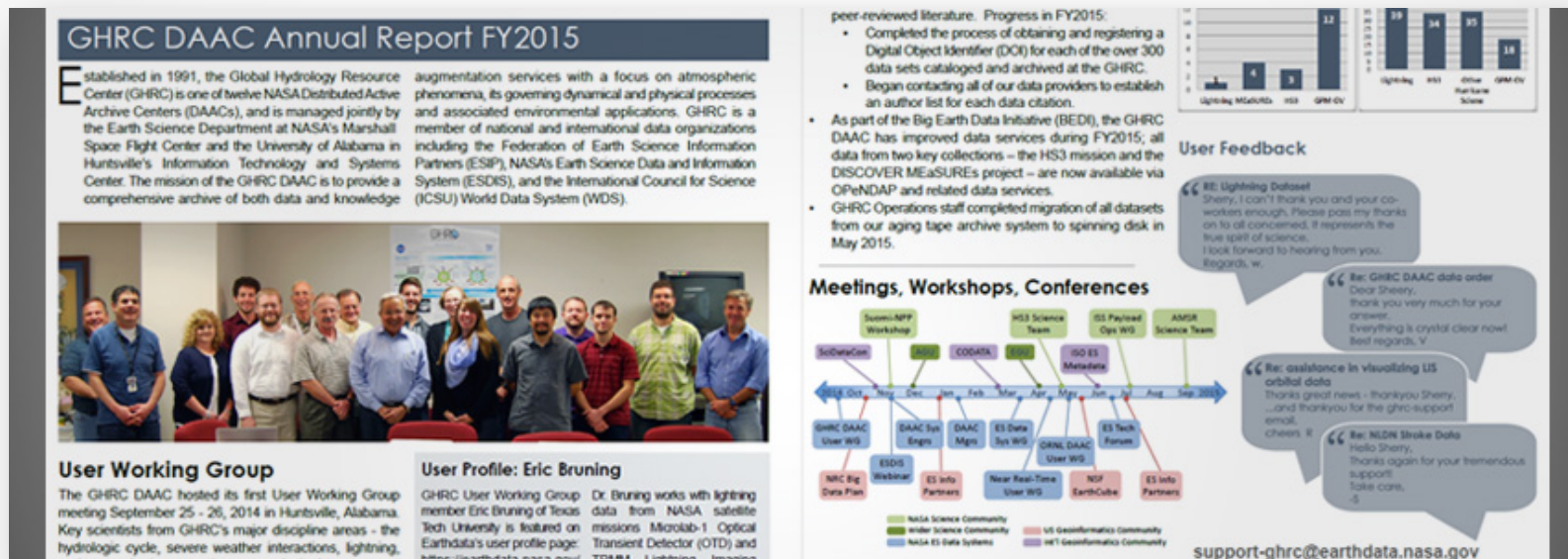
Rahul Ramachandran, **Ajinkya Kulkarni**, **Xiang Li**, **Roshan Sainju**, **Rohan Bakare**, and **Sabin Basyal**. 2015. "Use of Semantic Technology to Create Curated Data Albums." In *The Semantic Web in Earth and Space Science: Current Status and Future Directions*, edited by Peter Fox and Tom Norack. IOS Press. Available at: <http://www.iospress.nl/book/the-semantic-web-in-earth-and-space-science-current-status-and-future-directions/>

Curt Tilmes, Ana Pinheiro Privette, Jeffrey Chen, **Rahul Ramachandran**, **Kaylin Bugbee**, and Robert Wolfe. 2015. "Linking from Observations to Data to Actionable Science in the Climate Data Initiative." *IEEE Geoscience and Remote Sensing Symposium (IGARSS 2015)*, July 26-31 in Milan, Italy.

Peng Yue, **Rahul Ramachandran** and Peter Baumann, eds. 2015. *Earth Science Informatics special issue on Intelligent GIServices*. September 2015, Volume 8, Issue 3, pp 461-462. doi: [10.1007/s12145-015-0237-z](https://doi.org/10.1007/s12145-015-0237-z)

Peng Yue, Peter Baumann, **Kaylin Bugbee**, and Liangcun Jiang. 2015. "Towards Intelligent GIServices." *Earth Science Informatics special issue on Intelligent GIServices*. September 2015, Volume 8, Issue 3. doi: [10.1007/s12145-015-0229-z](https://doi.org/10.1007/s12145-015-0229-z)

Annual Report



Highlights and accomplishments from 2015
https://ghrc.nsstc.nasa.gov/home/ghrc-docs/2015annualreport_